

REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(a)

In re Application of	
Application Number <u>08/876,276</u>	Filed
Group Art Unit	Examiner

Paper No. _____

Assistant Commissioner for Patents
Washington, DC 20231

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

- ___ (A) referred to in United States Patent Number 6,174,673, column _____
- ___ (B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e., Application No. _____, filed _____, on page _____ of paper number _____
- ___ (C) an application that claims the benefit of the filing date of an application that is open to public inspection, i.e., Application No. _____, filed _____, or
- ___ (D) an application in which the applicant has filed an authorization to lay open the complete application to the public.

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US006174673B1

(12) **United States Patent**
Short et al.

(10) **Patent No.:** **US 6,174,673 B1**
 (45) **Date of Patent:** ***Jan. 16, 2001**

(54) **HIGH THROUGHPUT SCREENING FOR NOVEL ENZYMES**

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(*) **Notice:** Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

This patent is subject to a terminal disclaimer.

(21) **Appl. No.:** **09/098,206**

(22) **Filed:** **Jun. 16, 1998**

Related U.S. Application Data

(63) **Continuation-in-part of application No. 08/876,276**, filed on Jun. 16, 1997.

(51) **Int. Cl.⁷** **C12Q 1/68**

(52) **U.S. Cl.** **435/6; 435/69.1; 435/440; 435/471; 435/476; 435/320.1**

(58) **Field of Search** **435/6, 69.1, 440, 435/320.1, 471, 476**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,399,219	8/1983	Weaver	435/34
4,643,968	2/1987	Weaver	435/32
4,647,536	3/1987	Mosbach et al.	435/177
4,916,060	4/1990	Weaver	435/29
4,959,301	9/1990	Weaver et al.	435/5
5,055,390	10/1991	Weaver et al.	435/5
5,225,332	7/1993	Weaver et al.	435/29
5,824,485 *	10/1998	Thompson et al.	435/6

FOREIGN PATENT DOCUMENTS

WO 98/56904	12/1998	(WO)
WO 99/49315	9/1999	(WO)
WO99/54494	10/1999	(WO)

OTHER PUBLICATIONS

Zhang et al. *FASEB J.* vol. 5, pp. 3108-3113, 1991.*

Plovins et al. *Applied and Environmental Microbiology*. vol. 60(12), pp. 4638-4641, 1994.*

* cited by examiner

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(57) **ABSTRACT**

Disclosed is a process for identifying clones having a specified activity of interest, which process comprises (i) generating one or more expression libraries derived from nuclei acid directly isolated from the environment; and (ii) screening said libraries utilizing a fluorescence activated cell sorter to identify said clones. More particularly, this is a process for identifying clones having a specified activity of interest by (i) generating one or more expression libraries derived from nucleic acid directly or indirectly isolated from the environment; (ii) exposing said libraries to a particular substrate or substrates of interest; and (iii) screening said exposed libraries utilizing a fluorescence activated cell sorter to identify clones which react with the substrate or substrates. Also provided is a process for identifying clones having a specified activity of interest by (i) generating one or more expression libraries derived from nucleic acid directly or indirectly isolated from the environment; and (ii) screening said exposed libraries utilizing an assay requiring co-encapsulation, a binding event or the covalent modification of a target, and a fluorescence activated cell sorter to identify positive clones.

23 Claims, 16 Drawing Sheets